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**EXPERIMENT STATION
TUSKEGEE
NORMAL AND INDUSTRIAL INSTITUTE
TUSKEGEE INSTITUTE, ALA.**

ALFALFA

**THE KING OF ALL FODDER PLANTS
SUCCESSFULLY GROWN IN
MACON COUNTY, ALA.**

**BY GEO. W. CARVER, M. S. AGR.,
DIRECTOR**

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ALFALFA

THE KING OF ALL FODDER PLANTS, SUCCESSFULLY GROWN IN MACON COUNTY, ALABAMA

G. W. CARVER, M. S. AGR., DIRECTOR

INTRODUCTION

For many years we have been testing in one way or another almost every variety of legume that seemed in the least promising, with the view to finding one or more that would succeed in this section and give us a permanent pasture without having to prepare and re-seed the ground each year.

Alfalfa has really gone beyond the high standard set by its enthusiastic admirers, and has in a remarkable way convinced the most skeptical that it can be grown on sandy soil.

Location and Soil

In character the soil is a light-gray, sandy, upland, free from lime, underlaid with red and yellow mottled clay, which crops out here and there on the surface. The sand content ranges from 75 to 80 per cent, and is just the kind of soil upon which time-honored custom says alfalfa will not grow.

The Beginning

Early in the summer of 1911 the land was broadcasted with 8 tons of barnyard manure to the acre; plowed to a depth of 9 inches, and sowed in cow peas, which made a heavy growth of vines and an excellent crop of peas. The vines being too heavy were grazed off by the cows, re-manured with 5 tons of barnyard manure to the acre, 5 tons of caustic lime (air slaked), and 5 tons of crushed lime rock per acre. These were plowed in and harrowed thoroughly.

NOTE—Later experiments prove that 2 tons of caustic lime or 3 tons of agricultural lime per acre give just as good results on these soils.

Inoculating the Seed

Before beans, peas, clovers, vetches, peanuts, alfalfa, etc., will grow and thrive, the little germs (bacteria) must be present in the soil so they can attach themselves to the roots, and form the characteristic swellings called nodules, found in greater or less abundance on all healthy roots of the great pod-bearing family. The act of supplying the young plants with these germs is called inoculation, and may be done in the following ways:

1. By using a commercial germ, of which there are many now on the market. All that is necessary is to follow the printed rules which always accompany each package.

2. By securing soil from a good alfalfa or sweet-clover field. Scatter evenly over the field from 500 to 600 lbs. per acre of this soil. Select a cool, cloudy day to do this work. Sow the seed at once, and harrow or brush in lightly.

3. Where it is difficult to get large quantities of soil secure about a bushel of earth carefully collected from among the roots of the thriftiest alfalfa or sweet-clover patches; pass through a coarse sieve to remove the large lumps, trash, etc.; dampen the seed a little; mix the soil with them, and stir constantly until every seed has a little film of earth around it. This can be easily and quickly done by spreading the seed out on a smooth floor. This method has given us excellent results. The seed should be sown at once or spread out in the shade to dry.

Sowing

Select any good, Southern-grown seed if possible, and sow at the rate of 25 lbs. per acre, which is very heavy seeding, but it is of distinct value in smothering out the weeds, which are the greatest enemies to alfalfa growers.

Caution.—Do not inoculate and sow in hot, dry, sunshiny weather, as the germs (bacteria) are very sensitive to excessive heat and bright sunlight, and many would be killed, rendering the inoculation more or less ineffective.

After-Management

From the very first, a war on weeds must be made. If they are very thick and the alfalfa small and weak, they must be pulled out by hand. All weak and sickly spots must be re-limed, re-manured, and fresh seed sown. A hand-rake as a rule is sufficient with which to put in the seed on these small patches.

Results

As previously stated, the ground for our two acres of alfalfa was prepared as above described; the seed was of the Provence variety, inoculated with Farmogerm, and sown November 4, 1911.

Note.—Owing to the extreme drouth in the fall, this seeding was at least three weeks later than it should have been, as it did not give time enough for the young plants to get sufficiently strong to stand the winter as they should, and much of it froze out.

January 15th it was re-seeded with 15 pounds of seed to the acre. A light scratch harrow was made by driving large spike nails

through a plank, making the same into a V-shaped harrow. This was run over the ground, and was sufficient to rake the seed in and do little or no injury to the growing plants.

Cuttings

1912

| | |
|--------------------------------|------------------------------|
| April 17th, cut from it..... | 1,000 lbs. green hay |
| June 3rd, cut from it..... | 2,730 lbs. green hay |
| July 3rd, cut from it..... | 3,165 lbs. green hay |
| August 5th, cut from it..... | 4,400 lbs. green hay |
| October 11th, cut from it..... | 3,338 lbs. green hay |
| Total | 14,633 lbs. green hay |

| Month | Rainfall |
|-----------------|--------------|
| April | 12.42 inches |
| May | 1.85 inches |
| June | 3.35 inches |
| July | 6.23 inches |
| August | 8.03 inches |
| September | 5.94 inchse |
| October | 2.05 inches |

1913

| | |
|--------------------------------|-----------------------------|
| April 16th, cut from it..... | 2,020 lbs green hay |
| June 12th, cut from it..... | 1,100 " " " |
| August 27th, cut from it..... | 2,600 " " " |
| October 13th, cut from it..... | 1,190 " " " |
| Total | 6,910 lbs. green hay |

| Month | Rainfall | |
|-----------------|-------------|------------------------|
| April | .45 inches | |
| May | 1.46 inches | As we recall, this |
| June | 1.62 inches | was a very dry year. |
| July | 5.36 inches | Corn planted along- |
| August | 1.48 inches | side the alfalfa burn- |
| September | 4.78 inches | ed up and did not |
| October | 3.24 inches | make anything. |

1914

| | |
|-------------------------------|-----------------------------|
| April 29th, cut from it..... | 5,505 lbs green hay |
| August 6th, cut from it..... | 1,200 " " " |
| August 26th, cut from it..... | 2,320 " " " |
| Total | 9,025 lbs. green hay |

| Month | Rainfall | |
|-----------------|-------------|---------------------|
| April | 4.34 inches | |
| May | 1.03 inches | |
| June | 1.14 inches | |
| July | 1.20 inches | This was also a |
| August | 4.71 inches | very trying year on |
| September | 2.35 inches | crops—very hot and |
| October | 4.32 inches | dry. |

The rainfall during the growing season for the three years is most interesting, and shows conclusively what a wonderful drouth-resisting plant we have in alfalfa.

1915

| Month | Rainfall | |
|-------------|-------------|------------------------|
| April | .51 inches | Note that April |
| May | 8.03 inches | was exceedingly dry |
| | | —May, the latter |
| | | part, excessively wet. |

The grazing record for 1915 to date, June 5th, stands as follows:

Beginning with April 6th, 12 milch cows and 1 horse were grazed upon it every day for 1 month—the exact milk record was kept for only 1 cow. At the beginning of the period this particular cow gave 30 lbs., or 3 3-4 gals. of milk per day. At the end of three weeks' grazing she gave 38 lbs., or 4 3-4 gals. of milk. The beet pulp and rape, which previous to the grazing constituted part of the ration, was cut off altogether. The other cows also made satisfactory milk records.

In addition to the above, a cow greatly run down in flesh was put in. Within a few days she began to increase in flesh.

All were removed and the plot allowed to grow for two weeks, during which time copious showers fell. It soon reached a height of two feet, thick and wonderfully luxuriant.

Forty-eight milch cows were turned in and permitted to graze 4 days in succession without doing the plot the slightest injury; in fact, it seems thicker and better now than before it was grazed.

Important Things to Remember

1. Bear in mind, if you wish to succeed with alfalfa, that you must carry out the suggestions laid down in this bulletin.
2. Be sure the ground is well prepared before sowing.
3. Be sure to get good, clean seed, free from weeds of all kinds. To insure this, purchase only from reliable seed houses.
4. Sow thick so as to smother out the weeds. Hand-pick the largest ones. When the alfalfa gets high enough to bear cutting, let the weeds grow until nearly ready to bloom; then cut them off close to the ground with a mower.

5. Remember that hundreds of acres of alfalfa are killed outright or greatly weakened until the grower concluded it would not grow, and plowed it up, simply because he did not understand when to cut and when to graze.

One of the most valuable characteristics of alfalfa are the strong, heavy crowns, from which a number of new stalks spring. Until alfalfa is three or four years old it should not be cut until these crowns form for the new growth. If one looks carefully he can see them as little buds clustered around the root just above the ground. The leaves on the stalks will also begin to turn yellow and fall off; then it should be cut.

An alfalfa weeder is an excellent thing to run over it, which will dig out the small weeds and loosen up the earth around the plants, and give them new life. An old spring-tooth harrow, with the teeth drawn down almost to a point, makes an excellent substitute for a real weeder.

Grazing.

This should not be done under three or four years, because the crowns are not well developed until that time; and many are the patches killed by being impatient for results and grazing too early. Do not make this mistake and blame something else for your failure.

6. Remember that when you get a good field of alfalfa it is permanent for many years, yielding handsome crops three or five times a year (depending upon the season) or, if wisely done, continuous grazing for all kinds of stock.

7. That there is practically no farm crop richer in real food nutrients than alfalfa, and that all kinds and classes of domestic animals will eat it greedily and thrive off it with little or no grain. It is also becoming quite popular as a food for man, and many are the delicacies that frequently find their way upon our tables and just as soon as we learn to appreciate its real value and the methods of preparation become more universal, it will constitute an important part of every well-compounded dietary.

8. Of the great list of agricultural plants that bring fertility to the soil, alfalfa is king of them all.

9. That, if every farmer had a few acres of alfalfa and cattle, sheep, hogs, goats, chickens, horses, mules, etc., to consume it, the manure from these animals, carefully saved and returned to the soil, within a few years would justify the whole South in boasting of being the richest and most productive section of the United States, if not of the world.

10. Let us hope that every farmer will plan now to put in at least a small acreage of this wonderful plant this fall.

